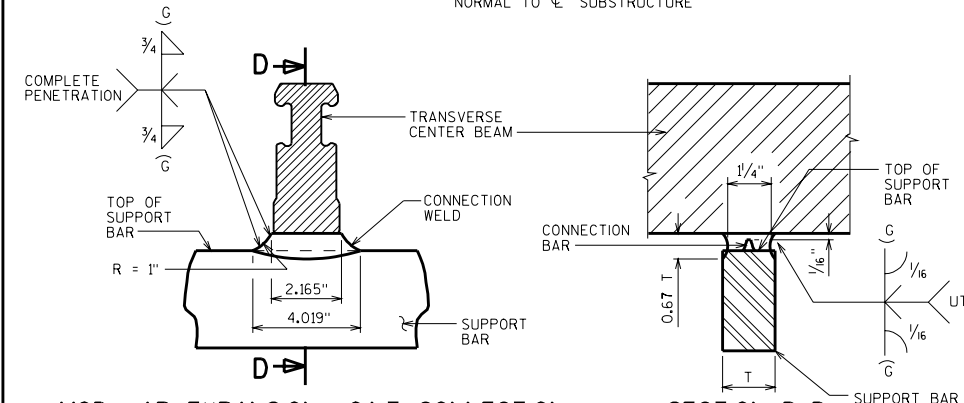
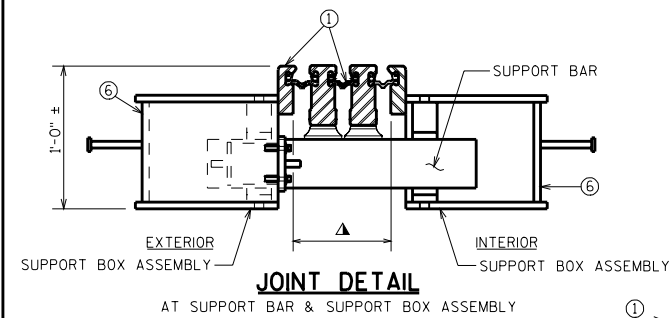


JOINT @ ABUT. (STEEL GIRDERS)
NORMAL TO \perp SUBSTRUCTURE

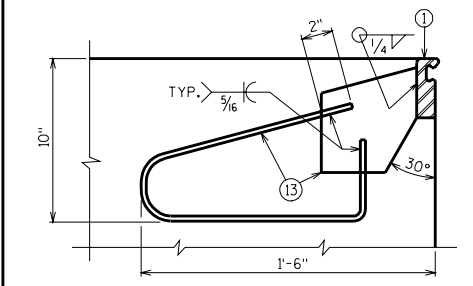


**MODULAR EXPANSION JOINT CONNECTION
DETAIL AND WELD SPECIFICATION**



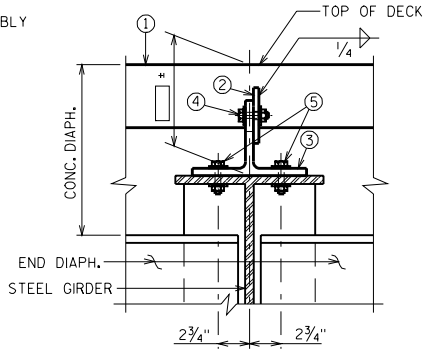
JOINT DETAIL

AT SUPPORT BAR & SUPPORT BOX ASSEMBLY

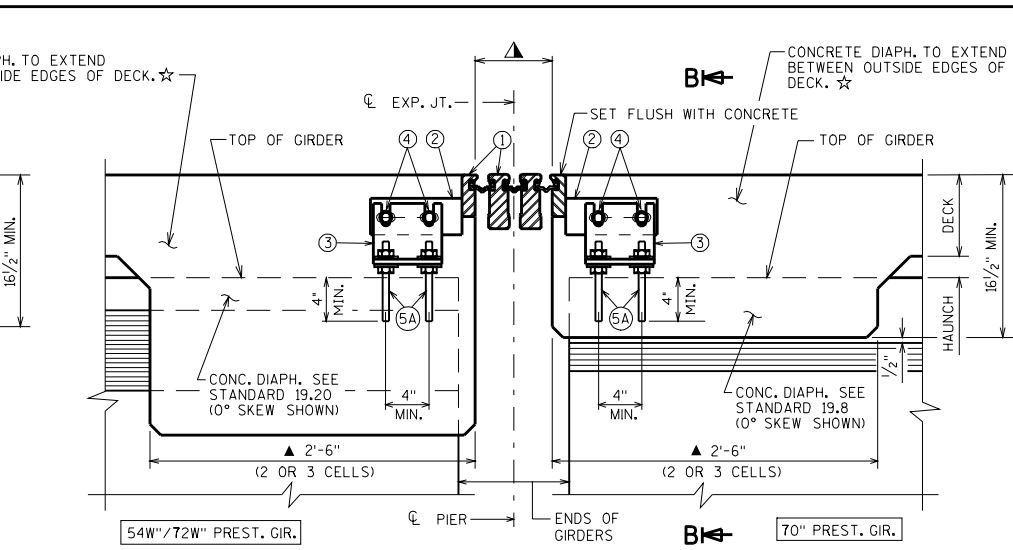


ANCHORAGE DETAIL

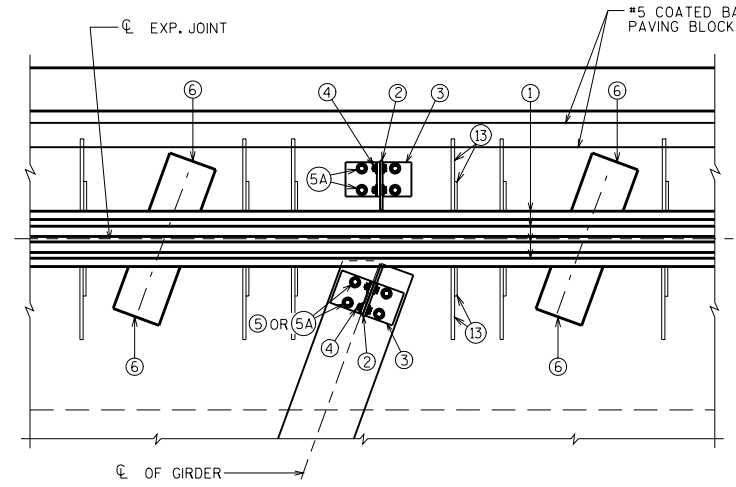
PLACE ADJACENT TO SUPPORT BOXES IN PAVING BLOCK @ ABUT. & IN DECK @ CONC. DIAPH.



SECTION A-A



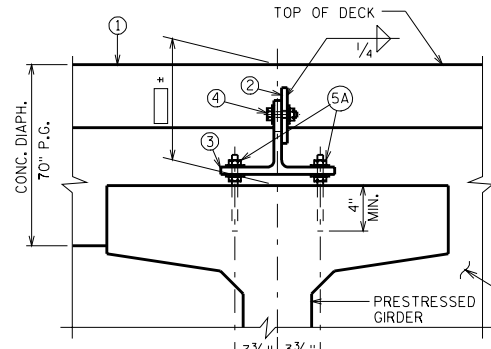
JOINT @ PIER (PRESTRESSED GIRDERS)
NORMAL TO \perp SUBSTRUCTURE



PART PLAN

NOTE: FABRICATOR WILL DESIGN EACH JOINT DEPENDING ON THE CONDITIONS AND THE DESIGN CRITERIA USED BY THE SUPPLIER. FABRICATION DRAWING IS SUBJECT TO THE APPROVAL OF THE BUREAU OF STRUCTURES.

SUPPORT BOXES ARE SHOWN FOR GENERAL INFORMATION AND LOCATION MAY VARY ACCORDING TO FABRICATOR DESIGN.



SECTION B-B

TEMP. TABLE

TEMPERATURE TABLE FOR SETTING JOINT OPENINGS TO BE DETERMINED BY JOINT MANUFACTURER WITH THE FOLLOWING DESIGN DATA:

1. \square IN. OF MOVEMENT PER 10° F
2. MEDIAN TEMPERATURE OF 45° F
3. TEMP. RANGE IN TABLE FROM (- 5° F) TO (+ 95° F)
4. ADJUST INITIAL JOINT OPENINGS BY A REDUCTION OF \square IN., WHICH ACCOUNTS FOR SHRINKAGE (CREEP) OF THE SUPERSTRUCTURE OVER TIME, TO PRODUCE FINAL JOINT OPENINGS FOR TABLE.

A TABLE OF JOINT OPENINGS BASED ON ABOVE DATA SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

INCLUDE ITEM 4. FOR PRESTRESSED GIRDER STRUCTURES ONLY. SEE CHAPT. 28 IN BRIDGE DESIGN MANUAL FOR ADJUSTMENT FACTOR.

STANDARD COVERS:

- SKEWS $\leq 30^\circ$
- 2 OR 3 CELL MODULAR EXPANSION JOINTS
- STEEL GIRDER BRIDGES
- PRESTRESSED GIRDER BRIDGES (70", 54W" AND 72W" SECTION)

LEGEND

1. MODULAR EXPANSION JOINT DEVICE.
2. $\frac{1}{2}$ " PLATE, ONE PER GIRDER MIN. PROVIDE 2 - 1" X 2" MIN. SLOTTED HOLES PLACED HORIZONTALLY FOR NO. 4.
3. WT 6 X 29 (OR EQUIVALENT BUILT UP T-SECTION), ONE PER GIRDER, PROVIDE 2 - 1" X 3" MIN. SLOTTED HOLES PLACED VERTICALLY IN WEB OF WT FOR BOLTS NO. 4.
4. $\frac{3}{4}$ " ϕ HIGH STRENGTH BOLTS WITH NUTS & WASHERS. (A325 GALV.)
5. $\frac{3}{4}$ " ϕ HIGH STRENGTH BOLTS WITH NUTS & WASHERS. FIELD DRILL HOLES IN GIRDER TOP FLANGE. (A325 GALV.)
- 5A. $\frac{3}{4}$ " ϕ THREADED ROD WITH 2 NUTS & WASHERS. GROUT THREADED ROD INTO FIELD DRILLED HOLES. (GALV.)
6. SUPPORT BOX ASSEMBLY FOR SUPPORT BAR (SPA, PER MANUFACTURER). SPACE TO MISS GIRDERS. FABRICATE BOX FROM $\frac{1}{2}$ " PLATES.
7. $\frac{3}{8}$ " BULKHEAD PLATE. WELD TO NO. 1, NO. 8 AND NO. 14.
8. INSIDE PLATE. FABRICATE FROM $\frac{3}{8}$ " PLATE.
9. OUTSIDE PLATE. FABRICATE FROM $\frac{5}{8}$ " PLATE.
10. $\frac{7}{8}$ " SQUARE BAR. WELD TO NO. 8 AS SHOWN.
11. $\frac{3}{4}$ " ϕ X 4" LONG STUDS. WELD TO NO. 8, NO. 7 & NO. 14 AS SHOWN.
12. $\frac{3}{4}$ " ϕ X 2" STAINLESS STEEL FLAT CTSK. SLOTTED HEAD CAP SCREWS. RECESS $\frac{1}{16}$ " BELOW PLATE SURFACE.
13. $\frac{1}{2}$ " PLATE WITH $\frac{5}{8}$ " ϕ LOOP ANCHOR FABRICATED AS SHOWN. SPACED AT MANUFACTURER'S SPEC.
14. INSIDE PLATE. FABRICATE FROM $\frac{5}{8}$ " PLATE
15. ADIPRENE BUTTON. SEE DETAIL. SET IN OUTSIDE PLATE.

★ AT LOCATION WHERE EXT. GIR. IS ADJACENT TO A RAISED SIDEWALK (STD. 30.7), CONC. DIAPH. DOES NOT EXTEND OUT TO EDGE OF DECK, BUT IS TERMINATED AT INSIDE FACE OF EXT. GIR.

† #5 COATED BARS. \pm 8'-0" LONG, 1'-0" MIN. LAP. CUT IN FIELD TO CLEAR JOINT SUPPORT SYSTEM AS REQ'D.

* POUR CONC. ABOVE THIS JOINT AFTER SUPERSTRUCTURE CONC. IS IN PLACE. STRIKE OFF & LEAVE ROUGH.

① DIMENSION IS PARALLEL TO \perp GIRDER.

▲ MANUFACTURER'S RECOMMENDED JOINT OPENING BASED ON THE TEMPERATURE ON THE DAY OF PLACEMENT PER TEMPERATURE TABLE.

■ (2) L-SHAPED #5 BARS @ 1'-0" SPA. (COATED) ANCHOR INTO PLACE W/ EPOXY RESIN AFTER MODULAR JOINT IS IN POSITION. FOLLOW STD. SPEC. FOR CONCRETE MASONRY ANCHOR, TYPE S WITH A MIN. PULLOUT CAPACITY OF 20 KIPS AND EMBEDMT OF 1'-0".

☑ TOP FLANGE WIDTH WITHIN LIMITS OF CONC. DIAPH. SHALL BE $\leq 20"$ FOR SKEWS $\leq 30^\circ$

▲ FOR PRESTRESSED GIRDERS, PLACE THE FOLLOWING NOTE ON PLANS: "JOINT MANUFACTURER SHALL INFORM AND PROVIDE NECESSARY DETAILS TO THE PRESTRESSED GIRDER FABRICATOR, WHEN FORM-OUT OF THE TOP FLANGE IS REQ'D. TO ALLOW PLACEMENT OF SUPPORT BOX ASSEMBLY."

NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE GLAND.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST & SWEEP.

NO EXPANSION JOINT PROTRUSIONS PERMITTED ABOVE ROADWAY SURFACE, ON PARAPET ROADWAY FACE OR ABOVE SIDEWALK SURFACE (FOR RAISED SIDEWALK).

THE EXPANSION JOINT SEALS SHALL BE PLACED, BONDED & SEALED AS RECOMMENDED BY THE MANUFACTURER. FORM WORK SHALL BE PLACED BETWEEN THE SUPPORT BOXES TO PREVENT CONCRETE INTRUSION INTO THE SUPPORT BOX. A TECHNICAL REPRESENTATIVE OF THE MANUFACTURER SHALL BE PRESENT DURING INSTALLATION. PRIOR TO SETTING THE JOINT ASSEMBLY INTO POSITION, THE PROJECT ENGINEER SHALL DETERMINE THE PROPER JOINT OPENING.

EXPANSION JOINT EXTRUSIONS SHALL BE FABRICATED TO CONFORM TO ROADWAY CROWN & GRADE. FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN & SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST BARS, PLATES, WT-SECTION, ANCHORAGE LOOP, & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THIS ASSEMBLY SHALL BE HOT DIPPED GALVANIZED.

COST OF FURNISHING & PLACING OF THE EXPANSION JOINTS COMPLETE WITH PARAPET PLATES & SIDEWALK PLATES SHALL BE PAID FOR UNDER THE PRICE BID FOR "MODULAR EXPANSION DEVICE, STRUCTURE B - -".

BAR STEEL REINF. IN DECK AND CONC. DIAPHRAGM SHALL BE RESPAVED AS NECESSARY TO ALLOW PLACEMENT OF JOINT ASSEMBLY.

**MODULAR EXPANSION
JOINT DETAILS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DEVELOPMENT SECTION

APPROVED: _____

DATE:
1-03